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ASBESTOS-IN-SOIL REGULATION AND MANAGEMENT PROPOSAL

- **Summary of Approach**
- **Proposed Amendments to Regulations and Policies**
- **Technical Support Documentation**

Prepared by: Bureau of Waste Prevention
Bureau of Waste Site Cleanup

October 30, 2006

ASBESTOS IN SOIL ("AIS")
STREAMLINING REGULATION AND MANAGEMENT

REVISED DRAFT RECOMMENDATIONS

1.0 Introduction

With the assistance of an external workgroup comprised of representatives with diverse backgrounds (including LSPs, lawyers, asbestos contractors, laboratory representatives and developers), MassDEP has developed an approach to address a range of situations in which asbestos has been released into soil, including:

- Asbestos in (and around) building components (e.g., pipes and boilers) that have been buried in soil;
- Asbestos in debris that has been disposed improperly in or on the ground; and
- Unconsolidated asbestos fibers found in soil.

In September 2004, MassDEP proposed regulations and policies to coordinate and streamline the assessment, cleanup and disposal of asbestos that has been released into soil. MassDEP held public hearings on these proposals, and since the end of the comment period has been working with the workgroup to revise the proposal in response to the comments received.

The proposals presented below protect public health and the environment from exposures to asbestos, coordinate the requirements of applicable state and federal programs, and provide certainty and flexibility to people who need to deal with asbestos in soil in the course of developing property and/or cleaning up releases.

This document describes these proposals:

Section 1:	Introduction
Section 2:	Background
Section 3:	Summary of the AIS Issues and Proposal Goals
Section 4:	Detailed Proposals for Notification, Assessment, Cleanup and Disposal of Asbestos in Soil
Section 5:	Proposed Revisions to the Massachusetts Contingency Plan
Section 6:	Proposed Revisions to the Air Quality Regulations
Section 7:	Proposed Revisions to the Solid Waste Regulations
Section 8:	Proposed Revisions to COMM-97-001
Section 9:	Proposed Best Management Practices for Bulk Loading of ACM Soil/Debris
Section 10:	Technical Support: MassDEP Sampling and Analysis Project for Soil Containing Asbestos
Section 11:	Acronym List and Terminology
Section 12:	Information on Public Hearings and Comment period

Please see the public hearing schedule and information about how to submit comments to MassDEP in Section 12. MassDEP is also soliciting public comment on proposed amendments of two MassDEP Policies: "Best Management Practices for Bulk Loading of ACM Soil/Debris" (Section 8) and "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills (COMM # 97-001, Section 10). The comment period for these policies will run concurrently with the comment period for the draft regulations; comments may be submitted on the regulations and policy together.

2.0 Background

2.1 Asbestos in the Environment

The term “asbestos” refers to a group of six different naturally-occurring fibrous minerals (amosite, chrysotile, crocidolite, and the fibrous varieties of tremolite, actinolite, and anthophyllite) that have been used in a wide range of manufactured products, such as roofing shingles, ceiling and floor tiles, insulation, brake pads, gaskets and cement fabrications. Asbestos contained in manufactured products that are intact and in good repair is unlikely to be a public health concern. However natural wear or actions that break or otherwise disturb these products have the potential to release small particles or fibers of asbestos.

Asbestos-containing building materials are still common throughout Massachusetts and there is a well-established MassDEP program that provides for the safe renovation or demolition of buildings containing asbestos and the disposal of debris generated by these activities. This proposal does not address the abatement of asbestos within buildings.

While there are also locations in Massachusetts where naturally occurring asbestos is present in rock and soil, such locations are not specifically addressed by this proposal.

Historic practices and even current illegal disposal activities (such as “midnight dumping”) have resulted in asbestos-contaminated debris being found throughout Massachusetts in a wide range of forms and conditions. This “Asbestos-Containing Debris” is rarely whole and pristine: in most cases the material has been broken, torn, ground, pulverized, smashed or weathered to a point that the original product may not be recognizable. The more broken or weathered the material, the more likely it is that small particles or fibers of asbestos have been released to the surrounding environment.

While Asbestos-Containing Debris can be found in discrete piles, such as when roofing shingles are dumped on a vacant lot, at other locations the debris is mixed in with soil and is inseparable from the natural soil. Such soil/debris mixtures might be a distinct layer of fill at a site, or it could visually indistinguishable from the surrounding “clean” soil. In addition to the pieces of Asbestos-Containing Debris, it is likely that the broken or worn debris has released asbestos fibers into the surround soil.

The amount of fibers released in this way will depend on many factors, including:

- The total amount of Asbestos-Containing Debris present;
- The nature of the original source material; and
- The amount of wear/weathering that has acted on the Debris.

2.2 Health Risk Concerns

Inhalation of asbestos fibers is the primary exposure pathway of concern. There is overwhelming epidemiological evidence that exposure to asbestos fibers in air increases the risk of lung disease and cancer, particularly mesothelioma – a cancer of the lining of the lung - in humans. As with other carcinogenic materials, the risk posed by the contamination is believed to be proportional to the exposure received by the receptor. For asbestos, this means that the health risk is related to the amount of small asbestos fibers that a person inhales.

When asbestos fibers are present in soil, any activity that generates dust - such as excavation - has the potential to move the fibers from the soil into the air where they can be inhaled.

2.3 Underlying Assumptions

The following assumptions form the basis of the proposed Asbestos-in-Soil proposal:

1 The smaller the piece of Asbestos-Containing Debris, the more likely it is that forces acting on the Debris have released asbestos fibers to the surrounding environment.

2 The greater the amount of Asbestos-Containing Debris at a site, the more likely it is that asbestos fibers have been released to the surrounding environment.

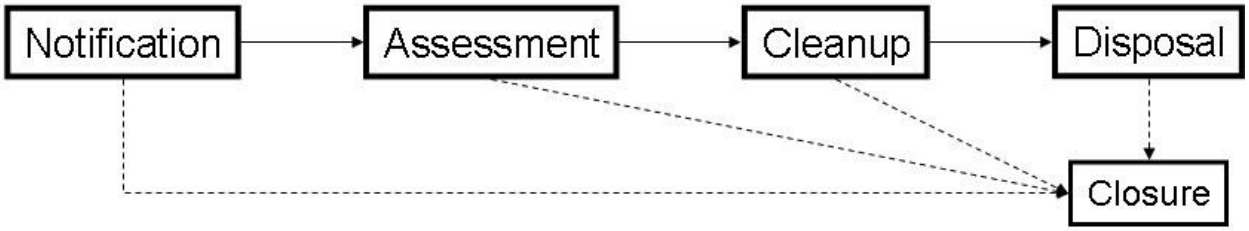
3 The greater the amount of asbestos fibers in soil, the greater the health risk will be should the fibers become airborne.

4 The more dust generated by an activity at a site where there is asbestos fibers in the soil, the more likely it is that asbestos fibers will become airborne.

5 In the absence of a direct measure of asbestos fibers in soil, the amount of Asbestos-Containing Debris at a site can be used as a surrogate for concern about asbestos fibers.

3.0 Summary of the Asbestos-in-Soil ("AIS") Issues and Proposal Goals

The presence of asbestos released to the environment poses a number of regulatory and technical issues. MassDEP recognizes that there is no single, ideal solution, but any proposal to resolve this issue must address some basic questions that the Department has grouped into four areas with opportunities for closure ("off-ramps" from the regulatory highway) available throughout the process.



3.1 Notification Issues

Notification Issues include basic questions the early stages of a site investigation, including:

- *What* factors would trigger an investigation to look for asbestos-in-soil?
- *What* criteria would trigger notification of MassDEP?
- *Which* program at MassDEP should receive the notification?
- *When* should notification occur?

The content of the pre-notification investigation, or "Due Diligence" requirements, are often driven by professional practice standards (such as ASTM Methods) or bank lending requirements, although MassDEP recognizes that state and federal requirements throughout the process will influence the scope of this investigation.

The AIS proposal recognizes five basic concepts related to notification:

- **The outcome for a site should not depend on which MassDEP regulatory program receives the initial notification.** The AIS proposal directs sites to the regulatory program best suited to address the conditions found to be present. Sites with ACM that is relatively intact, discrete and clearly subject to removal are directed to the MassDEP Abatement Program. Sites with unknown amounts of ACM that is broken up and dispersed, and where risk-based alternatives to removal are under consideration, are directed to the MassDEP Waste Site Cleanup Program.

- **Asbestos Containing Debris and asbestos fibers are not ubiquitous in the environment.** The decision to look for asbestos in soil should be driven by site-specific factors such as location, historic use and the presence of suspect material such as Construction and Demolition ("C&D") Debris.

- **Preliminary investigations should rely upon standard analytical methods – or combinations of such methods – to determine notification obligations.** Since there is not currently a standard method for quantifying asbestos fibers in soil, the AIS proposal includes notification criteria based on the observation and quantification of ACM present as a surrogate measure for asbestos fibers.

- **By establishing quantitative notification criteria, MassDEP recognizes that there are *de minimis* levels of asbestos in soil that would be unlikely to pose a significant risk of harm to health.** The presence of a single piece of ACM or a single fiber of asbestos is not, in itself, sufficient to trigger regulatory controls. In general, MassDEP establishes notification thresholds in order to ensure that conditions that ***may*** pose a risk to public health be addressed in an appropriate manner. (While material that does not trigger a notification threshold is commonly referred to as "unregulated", there may be regulatory requirements that still apply to the movement or disposal of the material.)

- **Alternatives to notification, such as the Limited Removal Action ("LRA") in the Waste Site Cleanup program, should be available or expanded for asbestos in soil.** Opportunities to quickly, efficiently and safely address soil contaminated with asbestos should be maximized.

MassDEP has developed the AIS proposal bring into regulatory oversight those sites that are likely to pose a risk of harm to health due to the nature, quantity and location of asbestos present. Many sites that would otherwise require notification may be addressed through an expanded LRA option. Many sites with small quantities of asbestos will not trigger the notification criteria. And at many sites asbestos will not be a contaminant of concern.

3.2 Assessment Issues

The site assessment provides the information necessary to determine whether remediation is needed and, if so, what response actions would be appropriate. This information includes:

- What are the contaminants of concern at the site? Is the problem limited to asbestos-in-soil?
- Where is the asbestos located?
- What is the concentration of asbestos in Debris and/or soil across the site?
- What are the current and planned future activities on the property?
- Who might be exposed to airborne asbestos fibers now or in the future?
- Do the site contaminants pose a significant risk of harm to health? Is remediation necessary?
- What are the remedial options available at the site?
- What is the most cost-effective approach to achieve No Significant Risk?

MassDEP believes that the scope of the assessment required to address an issue should reflect the nature and complexity of the issue. Simple assessments should be sufficient to address straightforward conditions. Complex conditions are likely to require complex assessments. The scope of the assessment should also match the scope of the eventual outcome.

The AIS proposal recognizes several basic concepts related to asbestos site assessment:

- **Absent disturbance of the material, asbestos is relatively immobile in the environment.** Environmental monitoring can be limited to soil unless site activities are likely to generate elevated dust levels. Asbestos-containing facility components, such as steam pipes, that are substantially intact can be removed along with a thin (6 inch) envelope of soil. Unless there is evidence that the material has been broken and disturbed no further investigation is necessary.

- **Conditions that are straightforward with obvious remedial strategies (i.e., removal) may not require extensive site assessment.** Such conditions may be addressed with strategies and

management practices common to indoor asbestos abatements, and the proposal directs these sites to the MassDEP Abatement Program.

- **Conditions that require extensive assessment to determine the nature and extent of release, the risk posed by the contamination, and the appropriate remedial strategy are directed to the MassDEP Waste Site Cleanup Program.** Assessment and cleanup would be conducted under the oversight of a Licensed Site Professional.

3.3 Remediation Issues

The need to conduct cleanup activities and the extent to which a condition needs to be remediated can be based on a number of criteria. MassDEP has permit or cleanup requirements that are risk-based, technology-based and/or management-based. Each of these approaches is designed (explicitly or implicitly) to mitigate or eliminate current or future risk to health or the environment.

The selection of an appropriate remedial alternative must consider a number questions, including:

- Is it necessary to remove asbestos-contaminated soil for reasons other than site remediation (e.g., development plans)?
- Can measures be incorporated into development plans to sequester residual contamination and facilitate site cleanup?
- Can response actions be accomplished as an abatement (under BWP)? As a Limited Removal Action ("LRA")? As a Release Abatement Measure ("RAM")?
- Will the selected remedy control potential exposure to asbestos in soil for current and future site conditions?
- Are land use restrictions necessary to maintain a condition of No Significant Risk into the future?
- What are the Best Management Practices that can be implemented to protect workers and neighbors during site remediation/development?

AIS proposal recognizes several basic concepts related to site remediation, including:

- **The multiple off-ramps incorporated into the MCP should also be available for asbestos-contaminated sites.** The Licensed Site Professional can target assessment and remediation to achieve a timely, cost-effective solution at a site. Site assessment and remediation can and should be coordinated with overall site development if appropriate.

- **Best Management Practices ("BMPs") have been shown to be highly effective in controlling dust-borne asbestos fibers during excavation, movement and disposal of contaminated soil.** During remediation and development activities the implementation of BMPs can be relied on to protect nearby receptors.

- **Absent disturbance of the material, asbestos is relatively immobile in the environment.** Response actions that sequester asbestos-contaminated soil underneath a cap, building, pavement or other permanent barrier to exposure can be cost-effective and health-protective with appropriate controls.

- **A condition of "No Significant Risk" must be demonstrated to achieve a Response Action Outcome (site closure) under the Waste Site Cleanup program.** As with other contaminants, this may include a demonstration of incomplete exposure pathways or quantitative risk assessment considering asbestos fibers.

- **Whatever the assessment and cleanup process followed, some form of closure is needed to document what occurred on-site and the level of remediation that took place.** Depending on the regulatory program and specific response action, this may include:
  - Retention of documentation for a set period of time, but no submittal or certification required;
  - Formal sign-off by an appropriate professional that necessary steps were taken to address an asbestos issue on the property;
  - Attainment of a Response Action Outcome for the site documenting the site poses no significant risk for all current and foreseeable future uses;
  - Implementation of an Activity and Use Limitation ("AUL") or other form of institutional control to convey to new owners the information necessary to manage current and future exposures.

3.4 Disposal issues

The Asbestos-in-Soil proposal also addresses the fate of soil that is removed from a property, either as a result of remedial activities or as a by-product of the site development. Soil management options should be clear for the full range of asbestos-contaminated soil and consider:

- Can the contaminated soil be reused on-site to minimize disposal costs?
- What is the regulatory classification of the material: Special waste? Remediation waste? Solid waste?
- What are the options for off-site placement: Out of state disposal? In-state reuse at landfills? In-state disposal? Off-site reuse, with or without a Beneficial Use Determination ("BUD")?
- What analyses must be conducted for the selected off-site placement option?

The AIS proposal recognizes several basic concepts related to disposal issues, including:

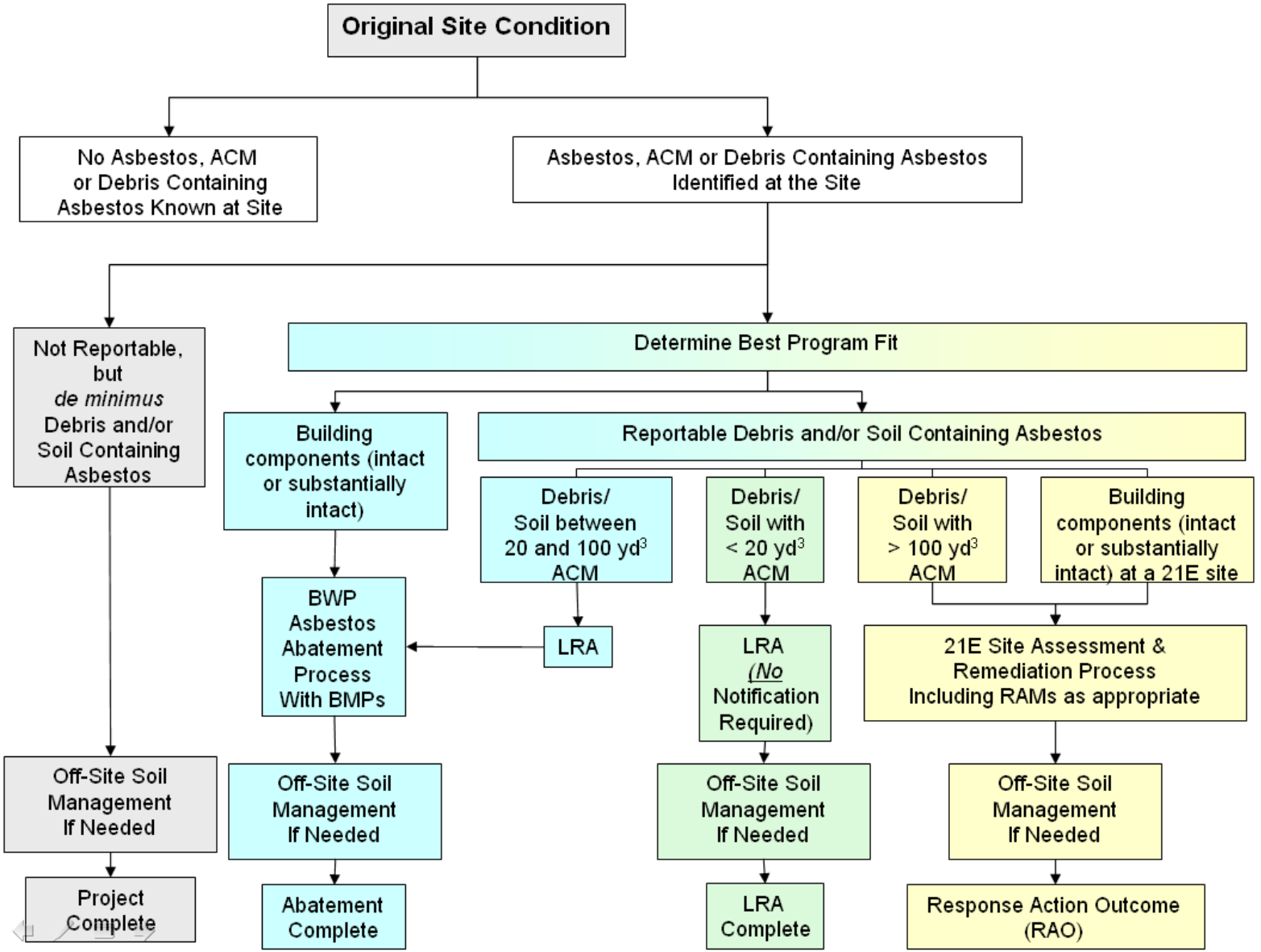
- **The designation of soil containing <u>any</u> *de minimus* amount of asbestos as a "Special Waste" eliminates in-state options and increases the cost of out-of-state disposal.** An expanded exemption from the definition of "Special Waste" (in Solid Waste rules) is proposed for soil containing asbestos-containing material at concentrations less than the MCP's Reportable Concentration and unconsolidated asbestos fibers where no asbestos-containing source material is present.

- **The current absence of asbestos in the COMM-97-001 policy results in a lack of re-use options for minimally contaminated soil, even though re-use would not pose a significant risk of harm for workers or neighbors of facilities.** The proposal includes a revision of the COMM-97-001 to provide a state-wide general approval for reuse of soil containing less than a maximum concentration of asbestos-containing material at active and closing landfills. Separate criteria are proposed, 1,000 mg/kg and 8,000 mg/kg, for use as alternative daily cover and as grading and shaping material, respectively.

3.5 Flowchart Depicting the Asbestos-in-Soil Proposal

Figure 1 describes major elements of MassDEP's approach for notifying the Department of releases of asbestos in soil, assessing those releases, and cleaning them up where needed.

Figure 1 - Conceptual Process to Address Asbestos- Contaminated Soil



4.0 Detailed Proposals for Notification, Assessment, Cleanup and Disposal of Asbestos in Soil

Three MassDEP programs currently regulate asbestos management to prevent releases of asbestos into the environment:

- Asbestos Abatement Program
  Building renovations and demolitions involving asbestos are regulated by MassDEP's Bureau of Waste Prevention (BWP) under 310 CMR 7.00, under the terms of a delegation from the U.S. EPA (under the National Emission Standards for Hazardous Air Pollutants, or "NESHAP"). Anyone engaging in renovation or demolition work is required to survey the building for asbestos, and notify BWP at least 10 working days before work commences if asbestos is present. Most asbestos removal work must be performed by contractors holding an appropriate license from the MA Dept. of Labor and Workforce Development (Division of Occupational Safety, DOS).

- Solid Waste Program
  Wastes containing asbestos are regulated by BWP under the Solid Waste rules, 310 CMR 19.000 and must be disposed of as a "special waste" (310 CMR 19.061).

- Waste Site Cleanup Program
  Asbestos is a listed "hazardous material" that is regulated by MassDEP's Bureau of Waste Site Cleanup (BWSC) under the Massachusetts Contingency Plan ("MCP", 310 CMR 40.0000) when it is released into the environment.

These proposals have been developed to protect public health and the environment as past releases of asbestos are cleaned up. MassDEP believes them to be functionally equivalent to the protections provided by NESHAP.

4.1 Proposal for Notification: What Situations Must Be Reported to MassDEP, and Which Program Should Be Notified

The 2004 proposal recommended tailoring MassDEP oversight to different types of situations where asbestos is found in soil, and proposed that any given release would be reported to only *one* program. This approach is consistent with long-standing principles of both the MCP and the air quality rules. In general, the MCP requires notification of sites that are likely to pose a significant risk to public health, safety, welfare, or the environment if they remain unaddressed, and does not require MCP notification for sites where current and foreseeable conditions are not likely to pose a significant risk. Notification under 310 CMR 7.15 for removal/management of building components containing asbestos will ensure a) that the work does not create risk by releasing asbestos to the air, and b) that asbestos-containing waste material is managed appropriately.

The single notification to MassDEP for asbestos and asbestos-containing material that is being excavated, handled, or otherwise moved also serves to satisfy federal NESHAP and Massachusetts Division of Occupational Safety (DOS)[1] notification requirements. Under this proposal, some of the notifications that would otherwise be submitted to MassDEP/BWP would be submitted to

[1] DOS uses the information to ensure that the asbestos contractors it licenses are performing in accordance with its rules.

MassDEP/BWSC concurrently with MCP plans. MassDEP will establish internal operating procedures (and may amend some established forms) to ensure that this single notification will continue to meet all state and federal reporting requirements.

The proposal also specifies conditions that ***would not*** require notification to MassDEP.

Table 1 outlines the notification requirements, exemptions and opportunities to conduct Limited Removal Actions to eliminate certain notification obligations.

Conditions for Which *Notification Is Not Required to Any MassDEP Program*

- Asbestos is contained in intact (or substantially intact) buried building components or structures that will remain undisturbed in their current location.

- Asbestos is present at the site only in the form of unconsolidated fibers in soil (with no identifiable source) and conditions do not pose an Imminent Hazard.

- There is no "Asbestos Containing Material", or "ACM" present at the site. ACM is defined to be material that contains asbestos equal to or greater than 1% by area.

- Asbestos Containing Material is present at the site but at quantities or concentrations lower than the notification thresholds specified in the proposed regulations.

- Asbestos Containing Material being addressed under a Limited Removal Action to mitigate a 120-day notification condition under the MCP if the quantity of material is less than 20 yd^3.

Conditions for Which *Notification to the MassDEP BWP Asbestos Abatement Program Is Required*

- Asbestos found in and around building components buried at a location is considered to be hazardous only at the point when the building components are going to be excavated, handled, or otherwise "managed". These situations are proposed to be reported to BWP and handled as asbestos abatements under the Air Quality regulations (310 CMR 7.15) if the location is not already a disposal site being assessed under the MCP. Notification under 310 CMR 7.15 would also be required for removing (or relocating) building components that are mostly intact and in their original trench or underground location, but that have been cut or broken, such as cement pipes that have been "burst in place" and pipes or boilers that are discovered when a backhoe breaks into them.

- Asbestos that is being addressed under a Limited Removal Action ("LRA") to eliminate a 120-day Waste Site Cleanup notification obligation if the quantity of ACM –contaminated material is greater than 20 yd^3.

Conditions for Which *Notification to the MassDEP Waste Site Cleanup Program Is Required*

- 2-hour Notification for any release of oil or hazardous material, including asbestos, that poses or is likely to pose an Imminent Hazard. This is an existing requirement (310 CMR 40.0321).

- 2-hour Notification for any sudden release of asbestos (such as during improper building demolition) that exceeds the Reportable Quantity of one pound (310 CMR 40.0311). This requirement is a current regulation that will be retained. The one-pound criterion will be

applicable to the asbestos itself and not to the weight of the asbestos-containing material (ACM), which is the most common form in which asbestos is released into the environment. The RQ is intended to address sudden releases of asbestos, not ACM.

- 2-hour Notification is proposed for 5 pounds (or more) or 5 ft^3 (or more) of Debris Containing Releasable Asbestos[2] that is found on the soil surface within 500 feet of an occupied building, school, playground, recreational area or park[3]. The combination of high exposure potential and likelihood of airborne asbestos fibers released from material that is easily broken or crushed is a combination that *could* pose an Imminent Hazard, similar to existing requirements [310 CMR 40.0321(2)(b)] for other hazardous materials. This reporting threshold of 5 lb or 5 ft^3 would also apply to Debris Containing Releasable Asbestos that is uncovered (i.e., made surficial) during an excavation. For this type of notification, asbestos would need to comprise 1% or more of each individual material in which it is found (as opposed to 1% or more of all the Debris at the site).

  A 2-hour notification is appropriate because these conditions have the potential to pose the highest hazard to public health from asbestos in soil, where it is most likely to become airborne and reach receptors. As with any 2-hour notification under the MCP, an Immediate Response Action (IRA) would be conducted to identify and implement any action needed to prevent exposure to surficial asbestos (e.g., removal or cover).

- 120-Day Notification for asbestos found in and around building components buried at a location that is already being assessed under the MCP, including the removal (or relocation) of building components that are mostly intact and in their original trench or underground location, but that have been cut or broken, such as cement pipes that have been "burst in place" and pipes or boilers that are discovered when a backhoe breaks into them. The site's LSP would ensure that the asbestos is abated in compliance with the requirements of 310 CMR 7.15.

- 120-day Notification for 1 pound (or more) or 1 ft^3 (or more) of Debris Containing Releasable Asbestos that is found on the soil surface or below the ground surface at any depth. An LRA may be used to address up to 100 yd^3 of this material within 120 days before notifying the Waste Site Cleanup Program. This criteria would require 120-day Notification of Debris Containing Releasable Asbestos found in quantities between 1-5 pounds or 1-5 ft^3 on the soil surface within 500 feet from receptors.

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[2] "*Debris Containing Releasable Asbestos*" would be defined as individual friable material(s) or pieces of friable material(s) 1) that are 3 inches or larger in diameter; 2) in which asbestos is present in concentrations equal to or greater than 1%; and 3) that, (a) when dry, can be crumbled, pulverized or reduced to powder by hand pressure, or (b) has become crumbled, pulverized, or reduced to powder. This term would include friable material that readily releases asbestos fibers to the surrounding environment (e.g., insulating materials that contain asbestos, spray-on fireproofing, plaster, and ceiling tiles) and material that was originally non-friable but has become friable due to the actions of weathering, demolition or other forces. Types of asbestos that "have become" friable are generally a subset of the federal definition of "Regulated Asbestos-Containing Material" ("RACM", see footnote 4), which includes roof tiles, shingles, pipe, roofing felts, caulking putties and stucco that have become friable or pulverized. The size threshold is intended to capture materials that can be identified through a visual inspection of Debris. "Debris" is used in this proposal as already defined in the MCP (310 CMR 40.0006). To summarize, "Debris" means solid material that is a manufactured object, plant or animal matter that is intended for disposal or is otherwise no longer serving its intended use, including demolition and construction waste.

[3] Consistent with 310 CMR 40.0321, which establishes notification requirements for contamination near "sensitive receptors".

Other Notification Considerations

Friable *vs.* Non-Friable

In general, asbestos in a truly nonfriable matrix is considered to pose less of a risk than friable asbestos. However, the Department recognizes that, with exposure to weather over time, nonfriable matrices can deteriorate and become friable, or decompose so that a mixture of unconfined asbestos fibers and debris is present in the environment. In practice, this proposal may bring much of the ACM found in the environment into the 21E system, because once it has been dumped in the environment, breakage during dumping and weathering over time starts to break up most ACM matrices, and fibers are released. U.S. EPA has established definitions and procedures ("RACM") for determining if a material is of regulatory concern due to its current condition and the likelihood of its releasing fibers during abatement, regardless of the friability of the original source material. In order to clarify and standardize the MCP notification requirements, "Debris Containing Releasable Asbestos" is proposed to be defined to include matrices that are friable as well as matrices that were originally nonfriable but have been broken, crushed and/or pulverized sufficiently so that they currently release asbestos fibers from the original matrix, thus becoming "friable". This assumption is consistent with the U.S. EPA definition of Regulated Asbestos Containing Material[4]

Current *vs.* Future Conditions

The MCP requires notification decisions to be made based on current conditions at the site (in terms of potential for exposure). A site may not need to be reported based on current activities that are taking place there (e.g., asbestos-containing debris is present, but at a concentration between the RCS-1 and RCS-2 level in an area that is categorized as RCS-2). However, if site uses change so that people can be exposed to detected contamination, there may be a reporting obligation. Most owners who have specific plans for redeveloping their property consider the new activities and uses when they make their reporting decisions.

Unconsolidated Fibers

The proposal to ***not*** require notification for active management of unconsolidated asbestos fibers in soil unless there is an identifiable source material is based on a literature review indicating that there is currently no standard analytical method available to reliably quantify asbestos fibers in a soil matrix. A discussion of analytical methods is presented in Section 10.

[4] "Regulated Asbestos-Containing Material" is (a) friable asbestos material (e.g., thermal, fire-proofing or acoustic insulation), (b) Category I non-friable ACM (e.g., gaskets, resilient floor covering or asphalt roofing product) that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM (cementious pipe, shingles, roof tiles, transite board) that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material…(40 CFR 61.141).

Table 1 – Summary of Notification Requirements

Site Condition/ Material of Concern	BWP Air Program	BWSC - MCP			
	10-Day Notification	2-Hour Notification	120-Day Notification	LRA Available?	No Notification Required
No ACM at Site					X
Substantially Intact "Facility Components" to remain undisturbed					X
Substantially Intact "Facility Components" *not* at an existing 21e site	X			-	
Substantially Intact "Facility Components" at an existing 21e site			X	No	
Any Imminent Hazard (not specific to asbestos)		X		No	
A sudden release greater than the 1 lb Reportable Quantity		X		No	
Pieces of ACM present, but less than notification thresholds					X
5 lb or 5 ft^3 of releasable asbestos on soil surface near sensitive receptors		X		No	
1 lb or 1 ft^3 of releasable asbestos on soil surface or at depth			X	Yes	No MCP Notification if LRA is successful
	X (If LRA > 20 $yd^{3)}$				X (If LRA < 20 yd3)
Unconsolidated fibers with no identifiable source					X

4.2. Case Management for Asbestos Sites

Site Characterization:

- The history of a site (with particular attention to the former presence of buildings and their renovation and demolition history) needs to be reviewed to identify the potential for encountering Debris containing asbestos.

- When Debris is encountered at a site, it needs to be evaluated to determine whether it includes asbestos-containing material.

Abatement of buried structures containing asbestos structures under 310 CMR 7.15:

- This proposal would allow inactive pipes, boilers, ducts, etc. that contain asbestos or are wrapped in asbestos-containing material to be left in place at the discretion of the property owner. If they need to be moved (or removed) and are mostly intact, they must be abated with BWP notification and standard abatement techniques, as well as "Best Management Practices" for bulk soil handling where applicable (see Section 3, Part D below for draft guidelines). If the site has been reported to MassDEP under the MCP, this abatement should occur under the supervision of an LSP, who would ensure that the asbestos-containing material is managed according to established work practices, etc. required by 310 CMR 7.15. To complete an abatement project, all visible asbestos-containing material will need to be removed, along with an additional 6 inches of soil immediately surrounding the structure. No confirmatory soil samples will be required to complete the abatement, since removal of the additional 6 inches will be presumed to have removed most fibers emanating from the material.

- Where asbestos-containing structures are left in soil, MassDEP recommends that the property owner keep a record of the residual asbestos-containing material and its location, and provide this information to the next property owner. No deed notice is required, due to the high costs and impracticality of creating surveyed plans of these components that would be required to meet the filing standards of Massachusetts Land Court and the Registries of Deeds.

Management of Debris containing ACM in soil:

- This proposal would require remediation of Debris Containing Releasable Asbestos (e.g., material found at sites where old building components have been improperly disposed or used for fill) triggering a 2-hour or 120-day MCP notification to be managed under the MCP. Such Debris found at a site at or below grade (uncovered through excavation) should be disposed of at a facility that is licensed or approved by MassDEP (or the state in which the disposal facility is located) to accept it. If the levels of Debris Containing Releasable Asbestos exceed the MCP notification criteria, it must be disposed of as a "Special Waste", in accordance with the rules established for handling Asbestos Containing Waste Material (see 310 CMR 7.00 and 7.15), or re-used at a Massachusetts landfill under the terms of COMM # 97-001 if appropriate (see Section 4.4 below). Soil or Debris Containing Releasable Asbestos at levels below the MCP notification criteria would be managed as unregulated solid waste (this provision would include asbestos in unbroken non-friable materials, although these materials would need to be managed carefully if they are moved, to avoid breaking or crushing them.[5]

[5] If non-friable ACM is broken or crushed, it would become friable, and the material maybe subject to notification under the MCP, depending on the quantity present.

Small quantities of ACM may be culled from the Debris (using work practices established in 310 CMR 7.15) and disposed of as "Special Waste", allowing the remainder of the Debris to be disposed of as Solid Waste if it is free of reportable ACM. Where it is not feasible to separate ACM from the Debris, all the Debris will need to be managed as Asbestos Containing Waste Material. Section 4.4 below discusses off-site management of soil containing asbestos in more detail.

- Management of asbestos-contaminated soil under the MCP will not require an additional notification under 310 CMR 7.15. BWP "Best Management Practices" will need to be implemented during excavation to avoid releasing asbestos into the air (See Section 8 below).

- LSPs will need to provide Waste Site Cleanup Opinions to ensure that assessments and remediation meet the MCP's requirements (see Section 4.2 below). LSPs will need to rely on asbestos consultants and contractors licensed by the Division of Occupational Safety to the extent required by that agency.

- Small volumes of Releasable Asbestos in Debris or soil triggering a 120-day MCP notification can be managed via the MCP's Limited Removal Action (LRA) provisions. Where only a 120-day reporting threshold is exceeded and the Debris/contaminated soil is less than 20 yd^3, an LRA may be conducted to remove the Debris, with no MassDEP notification required. Since LRAs are not required to be managed by an LSP, LRAs involving 20 yd^3 must be reported to MassDEP under 310 CMR 7.15 to ensure that the asbestos is managed properly. The goal of an LRA is to eliminate the reportable condition, and therefore the LRA must remove all visible Debris plus an additional 6 inches of soil immediately surrounding the Debris, or the site would need to be reported under the MCP (see below).

<u>MassDEP Oversight</u>

- BWSC staff would audit reports submitted under the MCP that concern asbestos contamination as they currently do for reports dealing with other contaminants.

- Abatements of building components reported under 310 CMR 7.15 would be overseen by BWP staff, as with abatements of asbestos in on-going renovation or demolition projects.

- MassDEP retains its existing authority to pursue enforcement actions for improper building demolition or renovation involving ACM that result in releases of asbestos into the environment (under 310 CMR 7.00), and for improper/illegal disposal of construction and demolition debris (under 310 CMR 19.000) that come to the agency's attention. In such situations, MassDEP generally expects the property owner to remove all visible debris (and manage it as Asbestos Containing Waste Material if it includes asbestos). Residual contamination would need to be reported under the MCP if it exceeds a notification threshold. The application of specific cleanup standards at sites where illegal disposal of construction and demolition debris has occurred will be determined by MassDEP on a case-by-case basis, and may be the subject of future policy development under the Department's Enforcement Response Guidelines.

4.3 Proposals for Cleanup Decisions ("How Clean is Clean Enough?")

- A risk-based approach should be used to make "how clean is clean enough" decisions for sites involving asbestos in soil under the MCP Method 3 risk characterization rules. This

approach includes the use of measures to eliminate potential exposure (such as a cap), as well as those that reduce environmental concentrations (such as removal and disposal).

- Low levels of asbestos fibers at 21E sites would be allowed to remain in some soil matrices without a barrier and AUL where it can be demonstrated that the asbestos presents an insignificant exposure (and therefore an insignificant risk) because its disturbance would not release enough fibers into the air to cause a significant risk. A decision to leave such low levels of asbestos in soil without a barrier to exposure must be based on a demonstration that the risks are truly insignificant, based on one of the methods described in Table 2.

- Risk-based cleanup decisions must consider current and potential future inhalation exposure to asbestos fibers (either incorporated into a material or in unconsolidated form) at or from the disposal site using appropriate methods to quantify the current and/or future concentration of asbestos in air.. DEP is considering the development of guidance for this demonstration, which would include several analytical options that could be used to support an LSP's Opinion that a condition of No Significant Risk has been achieved. These options would include the use of MassDEP's "dust generation" model, EPA's "Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Materials" (i.e., the "Superfund Method"), or performance of activity-based sampling. The demonstration should address both "on-site" and "off-site" receptors that could be affected by airborne asbestos, as well as any specific characteristics of the type(s) of asbestos containing Debris that has been found at the site. MassDEP solicits comment on issues that such guidance should address.

- At sites where quantities of ACM in Debris or soil are less than the applicable Reportable Concentration, no notification will be required. However, as with other types of hazardous materials, remediation may still be necessary to eliminate a Significant Risk, pursuant to 310 CMR 40.0370. Such response actions would be conducted without the submittal requirements, approvals and fees of the MCP. Management of the contaminated soil would not be subject to any otherwise applicable BWP requirements, including ANF-001 notification (unless the asbestos is contained in a buried building component that needs to be abated).

Table 2
Options for Closure & Demonstrating "No Significant Risk" Under the Massachusetts Contingency Plan ("MCP")

Management Option	Applicable Criteria	Activity & Use Limitation Required?
Achieve "non-detect" levels of asbestos in soil -	No Debris Containing Asbestos Source Material No asbestos fibers in soil (PLM with TEM confirmation)	No
Achieve "background" levels of asbestos in soil	Establish site-specific or literature-based background levels Conduct background comparison consistent with existing MCP guidance (not specific to asbestos)	No
Eliminate Exposure Pathways	Use streamlined (qualitative) Method 3 Risk Characterization Material can be left on-site Demonstrate incomplete Exposure Pathway, such as covered by pavement, building, cap or clean soil Quantitative risk assessment *not* necessary	Yes – to maintain cap/cover and control exposure
Demonstrate "No Significant Risk" ("NSR") using a quantitative risk assessment	Use quantitative Method 3 Risk Characterization Quantify current and future air exposure by using appropriate analytical methods (air monitoring, activity-based sampling, Superfund/Elutriator Method). Risk = $[Asbestos]_{PM10}$ x $[PM_{10}]$ x Unit Risk x Inhalation Exposure	No – IF demonstration of NSR for unrestricted use. Yes, if risk assessment limits exposure (e.g., commercial property use.)
Demonstrate "No Significant Risk" using another site-specific approach	Use qualitative or quantitative Method 3 Risk Characterization MassDEP is open to consideration of alternative approaches as they are developed.	No – IF demonstration of NSR for unrestricted use. Yes, if risk assessment limits exposure (e.g., commercial property use.)

4.4. Proposals for Disposal of Excavated Soil Containing Asbestos: "Special Waste" Exemption and Reuse Options

To address concerns raised by stakeholders about the costs associated with disposing of soil containing low levels of asbestos fibers, MassDEP proposed in the 2004 draft regulation package to exempt soil containing only unconsolidated asbestos fibers (without source material) from classification as a "Special Waste" under 310 CMR 19.000. In response to comments received on that proposal, and in consideration of data generated by soil sampling during 2006 (See Section 10 below) MassDEP is proposing to expand this exemption to include soil contaminated with asbestos-containing material in concentrations that are less than the MCP reporting criteria, as well as unconsolidated asbestos fibers. A corresponding exemption is also proposed to be added to the definition of "Asbestos Containing Waste Material" in 310 CMR 7.00, to eliminate ambiguity. These proposals are described in Figure 2.

In addition, MassDEP is proposing to amend MassDEP Policy # COMM 97-001, Reuse and Disposal of Contaminated Soil at Massachusetts Landfills, to allow soil containing concentrations of asbestos-containing material that are lower than specific maximum limits to be used as shaping/grading material at in-state landfills, and, with a lower maximum contamination limit, as daily cover at these facilities. This proposal is based on analytic results from soil sampling that MassDEP conducted in 2006 (described in section 10 below). The proposed maximum contaminant levels for asbestos in soil have been developed to ensure that site workers and neighbors will not be exposed to a significant risk from asbestos fibers that are released into air during typical soil management activities at landfills (using the same risk assessment methods that formed the basis for other maximum contaminant levels allowed by this policy[6]).

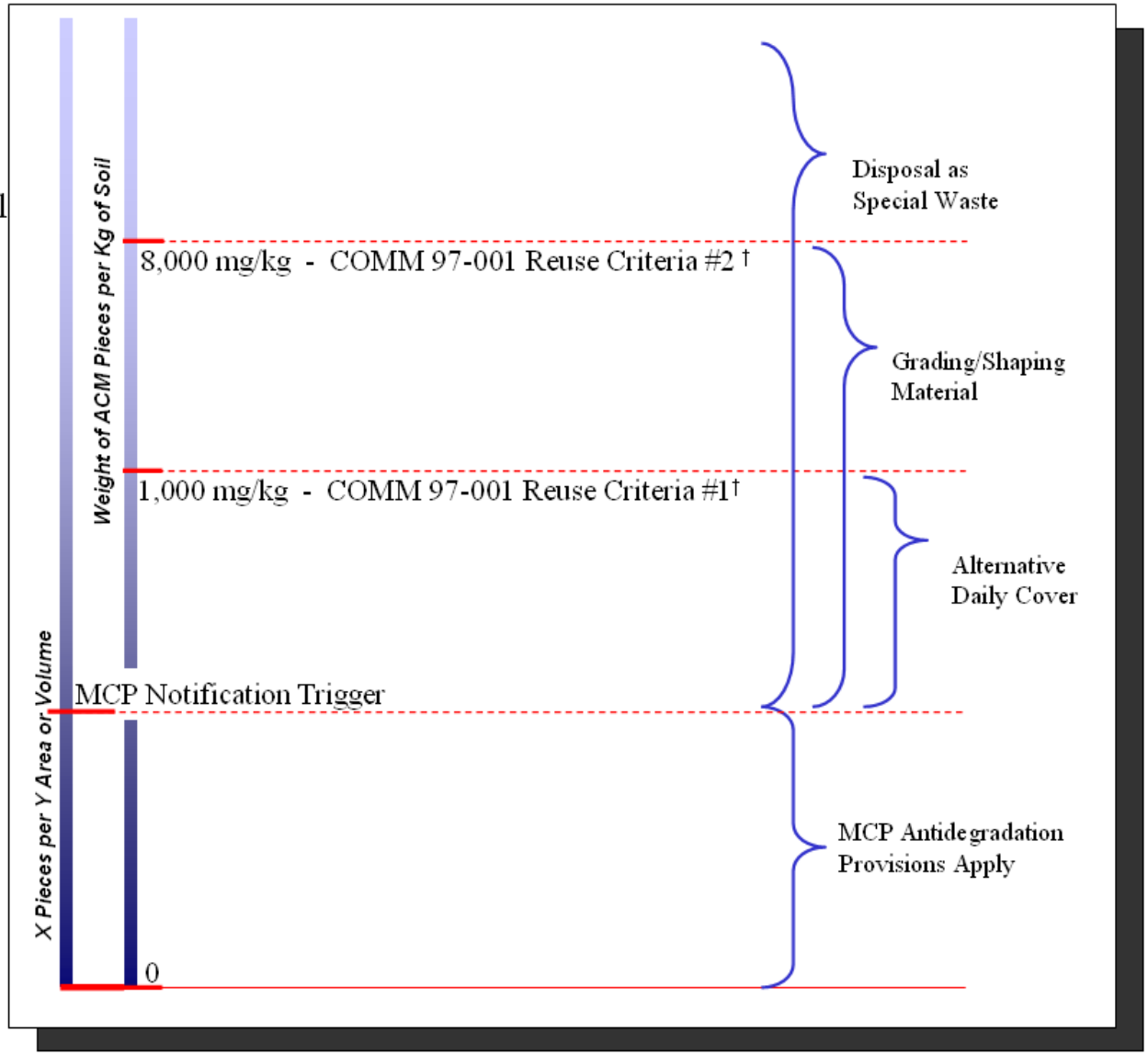
Please note that the proposed changes in 310 CMR 19.061 and MassDEP Policy # 97-001 cannot guarantee that in-state landfills will accept this material. However, if the proposed revisions are incorporated into this Policy, Massachusetts landfills that want to accept this material for use as alternative daily cover or grading and shaping material would be able to do so under the terms of their existing operating permit, and would not need further MassDEP approval. Also, the proposed change in 310 CMR 19.061 should ensure that, if out of state disposal is needed for soil containing levels of Debris Containing Releasable Asbestos that are lower than the MCP reporting thresholds, it could be managed as unregulated solid waste by the facility (unless the state in which the facility is located requires this soil to be managed as "Special Waste").

To ensure that people conducting response actions involving asbestos in soil under the MCP are aware of the regulatory requirements governing asbestos waste disposal, MassDEP is also proposing to amend 310 CMR 40.0032, "Contaminated Media and Contaminated Debris" to note the applicability of the Massachusetts Air Quality and Solid Waste regulations, and of the National Emission Standards for Hazardous Air Pollutants to disposal of soil containing asbestos (Please note: language is the same as in the 2004 proposal).

[6] Calculation of the maximum contaminant level for asbestos in soil used for alternative daily cover used standard assumptions about landfill workers' potential exposure, and also assumed continuous exposure to residents at the landfill property line over seven years. The calculation of the maximum contaminant level for asbestos in soil used for grading and shaping material also used standard assumptions about landfill workers' potential exposure, and assumed continuous exposure to residents at the landfill property line over six months (since this material is typically placed on the landfill face and covered more quickly than daily cover material).

Figure 2

Disposal Options for Debris Containing Asbestos Source Material



Re-Use Concentrations Resulting from Measuring the Weight of ACM (*Not Asbestos Fibers*) in Soil Using a Sieving Technique.

Example:

- Large, representative sample dried, weighed
- sieved using specified mesh
- identify, count & weigh ACM pieces on sieve
- ACM identified using standard bulk soil analyses (if necessary)

† See Section 3.4 – Proposed Amendment of MassDEP Policy # COMM 97-001, "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills"

5.0 Proposed Asbestos-Related Changes to the Massachusetts Contingency Plan

NOTE TO REVIEWERS: *The following changes are proposed to clarify the notification and cleanup requirements for asbestos fibers in soil and asbestos in Debris.*

This package contains new notification proposals that have been designed to address public comments about the 2004 regulatory proposals. MassDEP is also continuing to propose to amend 310 40.0030, Management of Remediation Waste, to ensure that off-site management of soil containing asbestos meets all applicable state and federal requirements (this section is included again for context). A revised proposal for amending 310 CMR 40.1003, Response Action Outcomes, is also included in this package to establish that Debris Containing Asbestos in Friable Material in surficial soil is considered to be a source to ambient air. Also, please note that one MCP revision proposed in the 2004 package was promulgated on April 3, 2006 with other MCP amendments in a package known as "Wave 2". This amendment established that asbestos does not have an Upper Concentration Limit in Soil or Groundwater (40.0996).

Issue: The terms "friable" and "nonfriable" are used, in part, to determine notification requirements. Definitions are proposed that mirror the federal NESHAP definitions, modified slightly to reflect the differences between site assessment/remediation and abatement. By its nature, "Debris" is not virgin, intact material and thus the Department has assumed that Debris containing broken and weathered ACM would release asbestos fibers to the environment. Should the MCP define new descriptive terms to distinguish between material that has (or may) release asbestos fibers and material that is unlikely to release such fibers?

5.1. Definitions

40.0006: continued

Debris Containing Releasable Asbestos means Debris that includes any material that is 1) 3 inches or more in diameter, 2) contains 1 percent or more asbestos by area , and 3) that, (a) when dry, can be crumbled, pulverized or reduced to powder by hand pressure, or (b) has become crumbled, pulverized, or reduced to powder.

5.2. Notification Exemptions

NOTE TO REVIEWERS: *The current regulations contain a definition and related notification exemption that could apply to certain limited asbestos-in-soil conditions. These exemptions apply to* "building materials still serving their original intended use or emanating from such use…" *The Department proposes to add two asbestos-specific 120-day notification exemptions at the end of the current list at 310 CMR 40.0317:*

310 CMR 40.0317: continued

(23) releases of asbestos from abandoned building components or structures, such as pipes, boilers or duct banks, that are intact or substantially intact. For the purposes of this section, "substantially intact" shall mean that the original structure remains recognizable, the Debris - Containing Asbestos in Friable Material appears to have originated from the structure, and that such Debris has not been dispersed more than one foot from the structure.

(24) releases indicated solely by the presence of unconsolidated asbestos fibers in soil, provided that the source of the asbestos fibers is not known.

5.3. 2-Hour Notification Requirements

NOTE TO REVIEWERS: *There are currently two 2-hour notification requirements that apply to asbestos. One is specific to the contaminant, the notification for a sudden release greater than the 1-pound Reportable Quantity. The other is a general requirement of a 2-hour notification for any contaminant posing an Imminent Hazard. The Department is proposing to a 2-Hour notification requirement for quantities of friable asbestos near sensitive receptors.*

310 CMR 40.0321: continued

(2) For the purpose of fulfilling the "Two Hour" release notification obligations of 310 CMR 40.0311(7), the following releases could pose an Imminent Hazard to human health:

(a) a release to the environment indicated by the measurement of oil and/or hazardous material in a private drinking water supply well at a concentration equal to or greater than ten times the Category RCGW-1 Reportable Concentration, as described in 310 CMR 40.0360 through 40.0369 and listed at 310 CMR 40.1600; or

(b) a release to the environment indicated by the measurement of concentrations of hazardous material, equal to or greater than any of the following concentrations at the ground surface or within a depth of twelve inches below the ground surface, at any location within 500 feet of a residential dwelling, school, playground, recreation area or park, unless access by children is controlled or prevented by means of bituminous pavement, concrete, fence, or other physical barrier

Hazardous Material	CAS number	Concentration (ug/g dry wt)
Arsenic (total)	7440382	40
Cadmium (total)	7440439	60
Chromium (VI) (or Total Chromium in the absence of CrVI data)	18540299	200
Cyanide (available)	57125	100
Mercury (total)	7439976	300
Methyl Mercury	22967926	10
PCB (total)	1336363	10

or

(c) a release to the environment for which estimated long-term risk levels associated with current exposures are greater than ten times the Cumulative Receptor Risk Limits in 310 CMR 40.0993(6). Past exposures may be included in such evaluations to the extent that it is reasonable to quantify those exposures; or

(d) a release to the environment indicated by the presence of either 5 cubic feet or more, or 5 pounds or more, of Debris Containing Releasable Asbestos , at the ground surface at any location within 500 feet of an occupied building, playground, recreation area or park.

(3) …

5.4. 120-Day Notification Requirements (310 CMR 40.0315)

NOTE TO REVIEWERS: *The following sections propose the establishment of Reportable* Concentrations *for Debris Containing Releasable Asbestos. This material is defined to be big enough (3 inches or greater in diameter) to be identified through visual observation. The Department is continuing to develop and test an analytical method that would reliable quantify smaller pieces of asbestos or fibers in soil. MassDEP is committed to evaluating the notification criteria after 2 years of implementation.*

The Department believes that the proposed reporting criteria are indicative of sites that would require further investigation under to determine the risk posed by the contamination and the appropriate remedial actions, if any, necessary. MassDEP specifically seeks comment on the reporting criteria described below and the ongoing project to develop analytical methods described in Section 10.

40.0315: Releases Which Require Notification Within 120 Days

Except as provided in 310 CMR 40.0317 or 40.0318, persons required to notify under 310 CMR 40.0331 shall notify the Department not more than 120 days after obtaining knowledge that a release meets one or more of the following sets of criteria:

(1) a release to the environment indicated by the measurement of one or more hazardous materials in soil or groundwater in an amount equal to or greater than the applicable Reportable Concentration described in 310 CMR 40.0360 through 40.0369 and listed at 40.1600;

(2) a release to the environment indicated by the measurement of oil and/or waste oil in soil in an amount equal to or greater than the applicable Reportable Concentration described in 310 CMR 40.0360 through 40.0369 and listed at 40.1600, where the total contiguous volume of the oil and/or waste oil contaminated soil is equal to or greater than two cubic yards;

(3) a release to the environment indicated by the measurement of oil in groundwater in an amount equal to or greater than the applicable Reportable Concentration described in 310 CMR 40.0360 through 40.0369 and listed at 40.01600;

(4) a release to the environment indicated by the presence of a subsurface Non-Aqueous Phase Liquid (NAPL) having a measured thickness equal to or greater than 1/8 inch and less than ½ inch; or

(5) except as provided in 310 CMR 40.0317 and 40.0321, a release to the environment indicated by the presence of either 1 cubic foot or more, or 1 pound or more, of Debris Containing Releasable Asbestos located at the ground surface or mixed in subsurface soil.

5.5. Management of Remediation Waste, 310 CMR 40.0030

310 CMR 40.0030 et. seq. establishes requirements that have been designed to ensure that contaminated *media containing Oil and Hazardous Materials that could be regulated as "hazardous wastes" pursuant to MGL c. 21C and 310 CMR 30.000 are appropriately managed. While asbestos is already a listed Hazardous Material under the MCP, management of wastes containing asbestos is regulated by the Massachusetts Air Quality Regulations [310 CMR 7.15 (e)] and Solid Waste Management Regulations (310 CMR 19.061), and by the National Emission Standards for Hazardous Air Pollutants (40 CFR 150 et. seq).*

*Therefore, in 2004, MassDEP proposed to add a new paragraph to 310 CMR 40.0032 ("*Contaminated *Media and Contaminated Debris" to direct people who are conducting response actions to the appropriate requirements for handling asbestos-contaminated soil.*
In addition*, an amendment of the "anti-degradation" provisions of the MCP in 310 CMR 40.032(3) was also proposed in 2004 to clarify that management of asbestos fibers in soil that would be exempt from both MCP and BWP asbestos program notifications would remain subject to the MCP's "anti-degradation" provisions. The amendments have been revised to be consistent with the new terms proposed for the MCP, and are reprinted here for context.*

40.0032 Contaminated Media and Contaminated Debris

…

(3) Soils containing oil or waste oil at concentrations less than an otherwise applicable Reportable Concentration and that are not otherwise a hazardous waste, and soils that contain one or more hazardous materials at concentrations less than an otherwise applicable Reportable Concentration and that are not a hazardous waste may be transported from a disposal site without notice to or approval from the Department under the provisions of this Contingency Plan, provided that such soil:
   (a) Is not disposed or reused at locations where the concentrations of oil or hazardous materials in the soil would be in excess of a release notification threshold applicable at the receiving site, as delineated in 310 CMR 40.0300 and 40.1600; and
   (b) Is not disposed or reused at locations where existing concentrations of oil and/or hazardous material at the receiving site are significantly lower than the levels of those oil and/or hazardous materials present in the soil being disposed or reused.

(4) Soil contaminated solely with Debris Containing Releasable Asbestos and soil contaminated with such Debris and oil and/or hazardous materials that are not categorized as hazardous waste pursuant to 310 CMR 30.000, and that is associated with response actions conducted pursuant to 310 CMR 40.0000 and/or with abatement work conducted pursuant to 310 CMR 7.15, shall be managed in accordance with:
   (a) The work practices and disposal requirements described in 310 CMR 7.15(e);
   (b) The use of a Bill of Lading to accompany off-site shipments for disposal described in 40 CFR 61.150(d); and/or

(c) Disposal in an appropriate facility in accordance with 310 CMR 19.061.

(5) Soil contaminated with Debris Containing ReleasableAsbestos and one or more hazardous wastes shall be managed in accordance with the provisions of 310 CMR 30.000; and shall use a Hazardous Waste Manifest to accompany off-site shipments for disposal.

(6) Contaminated Groundwater and Contaminated Surface Water that is collected, treated, conveyed, withdrawn, contained or discharged at or from a disposal site as part of a response action shall be managed in compliance with applicable provisions of 310 CMR 40.0030 and 40.0040.

(7) Contaminated Media and Contaminated Debris managed under the Bill of Lading process described in 310 CMR 40.0034 shall not be disposed of at a land disposal facility if a feasible alternative exists that involves the reuse, recycling, destruction, and/or detoxification of such materials. An evaluation of whether such an alternative is feasible shall consider:

(a) the volume and physical characteristics of the Contaminated Media and Debris;
(b) the levels of oil and/or hazardous materials present within the Contaminated Media and Debris; and
(c) the relative costs of management options.

5.6 General Provisions for Response Action Outcomes

…

(6) A Class A or Class B Response Action Outcome shall not be achieved unless and until each source of oil and/or hazardous material which is resulting or is likely to result in an increase in concentrations of oil and/or hazardous material in an environmental medium, either as a consequence of a direct discharge or through intermedia transfer of oil and/or hazardous material, is eliminated or controlled.

(a) Such sources may include, without limitation:
1. leaking storage tanks, vessels, drums and other containers;
2. dry wells or wastewater disposal systems which are not in compliance with regulations governing discharges from those systems
3. contaminated fill, soil, sediment and waste deposits; and
4. non-aqueous phase liquids.

(b) For the purposes of 310 CMR 40.1003(5), the presence of Debris Containing Releasable Asbestos in accessible soil pursuant to 310 CMR 40.0933(4)(c) is defined to be a source to ambient air.

(c) For the purposes of 310 CMR 40.1003(5), the downgradient leading edge of a plume of oil and/or hazardous material dissolved in and migrating with groundwater shall not, in and of itself, be considered a source of oil and/or hazardous material.

6.0 Proposed Revisions to the Air Quality Regulations

Note: Proposed new language is in **bold**.

7.0 AIR POLLUTION CONTROL (DEFINITIONS)

ASBESTOS-CONTAINING WASTE MATERIAL means any friable asbestos-containing material removed during a demolition/renovation project and anything contaminated in the course of a demolition/renovation project including asbestos waste from control devices, bags or containers that previously contained asbestos, contaminated clothing, materials used to enclose the work area during the demolition/renovation operation, and demolition/renovation debris, **but not including Asbestos in Soil as defined in 310 CMR 19.006.**

7.15: U Asbestos

(1) Standards for Demolition/Renovation

(a) Applicability. No person shall cause, suffer, allow, or permit the demolition/renovation, installation, reinstallation, handling, transporting, storage, or disposal of a facility or facility component that contains asbestos, asbestos-containing material, or asbestos-containing waste material in a manner which causes or contributes to a condition of air pollution.

(b) Notification. Each owner/operator of a demolition/renovation operation involving asbestos-containing material shall:

1. Provide the Department with all information required on a Department-approved form with respect to the intended demolition/ renovation operation of a facility or facility component. A waiver to the notification provisions contained in 310 CMR 7.15(1)(b)2.a. and b., may be granted by the Department in the case of an emergency.
2. Postmark or deliver all required information to the applicable Department regional office:
    a. at least ten working days before a demolition/renovation operation begins, or
    b. within one working day prior to the beginning of an emergency demolition/renovation operation unless a waiver is granted by the Department, or if less than one working day, notification shall be made initially by telephone with written follow-up, or
    c. where an owner/operator receives written Department approval of a planned demolition/renovation operation occurring during a 12 month period, provide revised information as required by the Department in writing, and a monthly report of updated information for actual work performed.
3. Include but not be limited to the following information on the Department-approved form:
    a. Name, address, and telephone number of the facility owner, operation manager, if any, contractor, and subcontractor, if any, contractor's or subcontractor's Massachusetts asbestos removal certification and licensing number, if any;
    b. Description of the facility being demolished and renovated, including the address, worksite location or locations as described in 7.15(1)(b)2.c., size, age, and prior and current use of the facility;
    c. Estimate (in linear feet or square feet) of the approximate amount of asbestos-containing materials to be handled under this application with a description of the techniques used for the estimation;
    d. Scheduled start-up and completion dates of the demolition/renovation operation, transportation, storage at a refuse transfer station facility (if applicable), and disposal at a sanitary landfill site of the asbestos-containing waste material; if the demolition/renovation start-up or completion date changes or is cancelled ensure

that notification is made in writing at least one working day prior to the originally-scheduled start date of the operation;

e. Description of proposed demolition/renovation operation and procedures to be used;

f. Name, address, and telephone number of the transporter company(s) responsible for transporting asbestos-containing waste material from the demolition/renovation site to storage site, if any, and to final disposal site;

g. Name, address, and telephone number of the refuse transfer station facility and owner responsible for storing the asbestos-containing waste material prior to final transport and disposal at a sanitary landfill site;

h. Name, address, and telephone number of the sanitary landfill facility and owner where the asbestos-containing waste material will be disposed;

i. For a facility described as an emergency demolition/renovation operation, the name, title, and authority of the state or local government official who evaluated the emergency and ordered the operation;

j. Date and signature of the facility owner/operator or facility owner's designee and date and signature of the contractor.

4. Separate notification will be required, except as to 310 CMR 7.15(1)(b)2.c., when:

a. demolition/renovations are scheduled for widely-spaced geographical locations on the same facility;

b. demolition/renovations are scheduled for a single facility, but are separated by a time period of greater than one week; or

c. when a demolition/renovation is postponed more than 30 days from the date on the initial notification.

5. Notwithstanding **the requirements of 310 CMR 7.15 (1)(b) (1-4), management of asbestos-containing material in soil at a disposal site for which response actions are being conducted pursuant to MGL c. 21E and 310 CMR 40.0000 (the Massachusetts Contingency Plan) does not require notification pursuant to this section, except that, when the response action is a "Limited Removal Action" conducted pursuant to 310 CMR 40.0318 and involving 20 or more cubic yards of Debris Containing Releasable Asbestos (as defined in 310 CMR 40.0000), notification to the Department is required pursuant to 310 CMR 7.15. (Please note: no notification to the Department is required for Limited Removal Actions involving less than 20 cubic yards of Debris Containing Releasable Asbestos).**

6. Notwithstanding the requirements of 310 CMR 7.15 (1)(b) (1-4), management of Asbestos in Soil (as defined in 310 CMR 19.006) does not require notification pursuant to 310 CMR 7.15.

(c) Procedures for Asbestos Emission Control. Each owner/operator shall comply with the following procedures to prevent visible or particulate emissions to the ambient air space:

1. Remove any asbestos-containing material from a facility or facility component prior to demolition/renovation operations if such operations will cause asbestos emissions, or will render the asbestos-containing material friable, or will prevent access to the asbestos-containing material for subsequent containment and removal;

2. When a facility component covered or coated with asbestos-containing material is being removed in units or as sections:

a. Adequately wet asbestos-containing material exposed during the removal operations;

b. Lower the units or sections to the ground level so as to not cause airborne emissions of asbestos; and

c. Ensure no release of asbestos to the ambient air space during removal of asbestos from these units or sections handled so as to ensure:

i. maintaining adequate wetness of the asbestos-containing material, and
ii. sealing the work area and using a local exhaust ventilation and collection system designed and operated to capture particulate asbestos material. This system must exhibit no visible or particulate emissions to the outside air and be designed and operated in accordance with the requirements of 7.15(1)(d), Air Cleaning;

3. When asbestos-containing material is being removed from a facility component the following procedures shall be performed:
   a. Ensure that such material is adequately wet;
   b. Contain the material *in situ* of the facility component;
   c. Lower the contained material carefully to the ground so as to prevent emissions;
   d. Ensure no release of asbestos emissions by methods of capture and containment of fugitive dust such as work area seal and air cleaning, as described in 310 CMR 7.15.
4. Once the asbestos-containing material have been removed and wetted, ensure that the material remains wet until and after it is sealed into a container for disposal.

(d) Air Cleaning. The owner/operator using air cleaning at a facility shall properly install, use, operate, and maintain all air-cleaning equipment authorized by 310 CMR 7.15(1)(d). Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos-containing material. Each owner/operator shall use one of the following air cleaning systems or their equal:

1. Use fabric filter collection devices and perform the following:
   a. operate the fabric filter collection devices at a pressure drop of no more than four inches water gauge, as measured across the filter fabric;
   b. ensure that the air flow permeability, as determined by ASTM Method D737-75, does not exceed 350 ft 3/min/ft2 for felted fabrics;
   c. ensure that felted fabric weighs at least 14 ounces per square yard and is at least 1/16 inch thick throughout; and
   d. avoid the use of synthetic fabrics that contain fill yarn other than that which is spun; or
2. Use portable, high efficiency particulate air (HEPA) filtered power exhaust units equipped with negative air pressure systems with operational alarm system capable of indicating the unit is working properly, and utilizing a clean filter specified for the unit and capable of filtering 0.3 micron particles with 99.97% efficiency; or
3. In the event that the use of an air cleaning system causes a fire or explosion hazard, the Department may authorize as a substitute
   a. the use of wet collectors designed to operate with a unit contracting energy of at least 40 inches water gauge pressure; or
   b. the use of filtering equipment other than that described in 310 CMR 7.15, if the owner/operator demonstrates to the Department's satisfaction that it is as efficient in filtering particulate asbestos material.

(e) Waste Disposal. Each owner/operator shall:

1. Discharge no visible or particulate emissions to the ambient air during the collection, processing, packaging, transporting, transferring, or disposing of any asbestos-containing waste material, and use the disposal methods specified in 310 CMR 7.15(1)(e) such that the asbestos-containing material is non-friable;
   a. adequately wet asbestos-containing waste material obtained from air cleaning equipment or from removal operations and, while wet, containerize and seal the asbestos-containing waste material in leak-tight containers, labeled

CAUTION
Contains Asbestos
Avoid Opening or
Breaking Container
Breathing Asbestos is Hazardous
to your Health

or, use warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA), or

b. process asbestos-containing waste material into non-friable form such as pellets or other shapes; or

c. use an alternative processing method that has received prior approval by the Department.

2. Store at a refuse transfer station facility permitted to manage asbestos waste in accordance with 310 CMR 19.061: *Special Waste*.

3. Dispose of asbestos-containing waste material at an approved sanitary landfill special waste site. If within Massachusetts, such sites must be operated in accordance with 310 CMR 19.000. Outside Massachusetts, such sites must be operated in accordance with applicable state and federal asbestos laws.

(f) Spraying. No owner/operator of a facility shall spray on any facility or facility component any asbestos-containing material.

(g) Insulating Material. No owner/operator of a facility may install or reinstall on a facility or facility component asbestos-containing insulating materia1.

(2) Enforcement Provisions. 310 CMR 7.15 is subject to the enforcement provisions in 310 CMR 7.52, except as to 310 CMR 7.15(1)(b).

7.0 Proposed Amendments to the Solid Waste Regulations to Address Asbestos in Soil

NOTE: **Bold** sections are the proposed changes to address asbestos in soil.

19.006: Definitions:

Asbestos in Soil means soil containing unconsolidated fibers of asbestos and/or soil containing Debris Containing ReleasableAsbestos (as defined in 310 CMR 40.0000) at a concentration that is less than the Reportable Concentration established in the Massachusetts Contingency Plan (i.e., 310 CMR 40.0315) and 310 CMR 40.0321).

19.061: Special Waste

(1) General . No solid waste management facility shall receive, store, process, treat or dispose of a special waste unless said solid waste management facility:

(a) is operated and maintained in compliance with a valid site assignment, plan approval or permit and any authorizations issued by the Department;
(b) has received written approval from the Department to handle the specific special waste pursuant to 310 CMR 19.061(5) and operates in compliance with the conditions of the approval, if required herein; and
(c) manages the waste in accordance with the requirements of 310 CMR 19.061(6).

(2) Classification of Special Wastes . A solid waste is classified as a special waste if:

(a) the waste is a special waste listed in 310 CMR 19.061(3); or
(b) the waste will require special management to ensure protection of public health, safety or the environment based upon the physical, biological, or chemical properties of the waste.

(3) Listed Special Wastes . Solid wastes that the Department has classified as listed special wastes include:

(a) asbestos waste;
(b) infectious wastes, except as specified in 310 CMR 19.061(6)(c)4.;
(c) sludges, including but not limited to wastewater treatment sludges, drinking water treatment sludges and industrial process wastewater treatment sludges.

(4) Application to Manage Special Wastes .

(a) General .
1. Solid waste management facilities shall use the application procedures described in 310 CMR 19.061(4), to apply to the Department for approval to manage a special waste.
2. The application shall include such information, data and descriptions as required by the Department to fully assess the nature of the special waste,

its handling requirements and the capability of the facility to properly manage the waste.

(b) Filing . An application for approval to manage a special waste shall be filed with the Department. At the time of application to the Department, a copy of the application shall be filed with the board of health in whose jurisdiction the facility is located.

(c) Application for Special Wastes Other Than Asbestos and Infectious Wastes . Except for asbestos waste and infectious waste as specified in 310 CMR 19.061(4)(d), applications to manage special wastes shall include the information specified in 310 CMR 19.061(4)(c). Data submitted on the physical, chemical or biological properties of the waste shall be generated from analyses of representative samples of the waste for each source of the waste. The application shall include:

identification of the solid waste management facility;

2. identification of the generator(s) of the waste and the specific source or sources of the waste;

3. a general description of the nature of the waste;

4. a description of the industrial or other process which generates the waste;

5. the quantity of the waste to be disposed and frequency of disposal (volume and/or tonnage per month or year);

6. a detailed description of the physical properties of the waste including, but not limited to size, density and percent solids;

7. a detailed description of the chemical properties of the waste including, but not limited to ph, reactivity, leachability and total metals;

8. a demonstration that the waste is not a hazardous waste pursuant to 310 CMR 30.000;

9. the biological properties of the waste, if applicable, including, but not limited to pathogens;

10. identification of special waste handling procedures to be employed by the facility to ensure proper management of the special waste; and

11. other information about the waste or the solid waste management facility as required by the Department in order to classify the waste or to determine the ability of the facility to handle the material.

(d) Applications for Asbestos Wastes and Infectious Wastes . Applications to manage asbestos wastes or infectious wastes shall include:

1. identification of the solid waste management facility;

2. the quantity of the waste to be handled or disposed (volume and/or tonnage per month or year);

3. identification of special waste handling procedures to be employed by the facility to ensure proper management of the special waste; and

4. other information about the waste as required by the Department in order to determine the ability of the facility to handle the special waste.

(5) Department Approval to Manage Special Wastes .

(a) Classifications . When the waste is not a listed special waste, the Department shall determine whether the waste is classified as a special waste. The Department's determination shall be based upon the quantity of waste, the physical, biological and chemical properties of the waste and whether the waste

will require special management to ensure protection of public health, safety or the environment.

(b) Decision . The Department shall determine whether a facility shall receive approval to manage the special waste identified in the application. The Department shall base its decision on whether the facility can safely manage the special waste.

(c) Issuance of a Decision . The Department shall issue a written decision for all wastes for which it receives a request conforming with the requirements set forth in 310 CMR 19.061(4).

(d) Conditions . The Department may issue an approval to manage a special waste subject to any conditions the Department deems necessary to protect public health, safety or the environment. The approval may also contain a condition prohibiting the applicant from accepting the special waste for a period of not less than 14 days, to allow the Department to review comments from the board of health submitted pursuant to 310 CMR 19.061(5)(f), unless the Department determines that an adverse impact would result from a delay in disposal.

(e) Permit Modification . If the Department determines that the handling of a waste at a facility shall cause a deviation from the approved plan or permit, the operator shall submit an application for permit modification in accordance with 310 CMR 19.039.

(f) Board of Health Notification and Comment Period .

1. The board of health shall be notified of the Department's decision on an application to manage a special waste.

2. Within 14 days of receiving such notification the board of health may request the Department to rescind or modify an approval to manage a special waste where the board of health deems that the handling of the special waste would have an adverse impact.

(g) Modification or Recision . The Department shall modify or rescind, as appropriate, an approval to accept special waste if the board of health demonstrates to the satisfaction of the Department, in the request filed in accordance with 310 CMR 19.061(5)(f), that the acceptance of the special waste under the conditions which may have been imposed by the Department is likely to result in an adverse impact.

(6) Management Requirements for Special Wastes .

(a) General Requirements . The following conditions shall apply to any solid waste management facilities handling special wastes:

1. the operator shall keep a copy of the approval to manage a special waste on file at the facility and make available said approval letter upon request by Departmental representatives; and

2. the operator shall instruct and train employees in proper handling procedures for any special waste approved to be managed by the facility.

(b) Requirements for Handling Asbestos Wastes . In addition to the requirements at 310 CMR 19.061(6)(a), all asbestos waste, except as specified in 310 CMR 19.061(6)(b)3., shall be managed in accordance with 310 CMR 19.061(6)(b)1. and 2.

1. All facilities shall observe the following requirements for handling asbestos waste:

a. Asbestos waste shall not be accepted for disposal at solid waste combustion facilities.

b. Asbestos waste that has not been properly wetted, containerized and labeled according to 310 CMR 7.15 shall not be accepted at any solid waste management facility.

c. Asbestos waste that has been properly wetted, containerized and labeled in accordance with 310 CMR 7.15 shall not be accepted at any solid waste facility unless that facility has received approval from the Department in accordance with 310 CMR 19.061 to accept asbestos waste.

d. Asbestos waste that has been properly wetted, containerized and labeled shall be managed so as to maintain the integrity of its containers and to prevent emissions of asbestos fibers to the ambient air.

2. Landfill Specific Requirements . In addition to the requirements in 310 CMR 19.061(6)(b)1., landfills that have received approval from the Department to accept asbestos waste shall observe the following operational requirements:

a. Asbestos waste shall be immediately disposed in the landfill and shall not be stored at the landfill prior to placement in the landfill.

b. Asbestos waste shall be placed in the landfill in such manner as to prevent the release of asbestos fibers to the air during placement.

c. Asbestos waste shall be placed in the landfill using a method approved by the Department. The approved method shall be as described in 310 CMR 19.100 through 19.204 in Department guidance or in a Department approval or permit. All such approved placement methods shall include requirements that the asbestos waste is covered by sufficient amounts of either solid waste that does not contain asbestos and/or daily cover material to assure that no asbestos fibers are released to the air during or subsequent to compaction.

d. Accurate records of the surveyed location in the landfill of all asbestos waste shall be maintained. Locations of asbestos deposition shall be noted in the Record Notice of Landfill Operation pursuant to 310 CMR 19.100 through 19.204. Locations of asbestos deposition shall also be included whenever information regarding the property is recorded on the property deed pursuant to M.G.L. c. 111, § 150A.

e. Areas of the landfill containing asbestos shall be clearly marked by the operator.

f. Areas of the landfill containing asbestos waste shall not be excavated.

3. Requirements for certain classes of asbestos wastes . The following asbestos wastes are not subject to the provisions of 310 CMR 19.061 except as specified at 310 CMR 19.061(6)(b)1.a.:

a. intact and unbroken vinyl asbestos tile (VAT);

b. asphaltic asbestos-containing siding products and asphaltic asbestos-containing materials such as roofing felts~~,~~ and roofing shingles (Note: This does not include other asbestos containing roofing shingles and siding products such as those containing a cementitious binding characterized as being hard and brittle.); ~~and~~

c. Asbestos in Soil as defined at 310 CMR 19.006; and

d. other asbestos waste so designated by the Department in writing.

(c) Requirements for Handling Infectious Waste . In addition to the requirements at 310 CMR 19.061(6)(a), infectious waste shall be handled in accordance with the following:

1. In addition to the requirements of 310 CMR 19.000, infectious waste shall be treated, packaged, labeled and disposed of in accordance with 105 CMR 480.000.

2. Landfills . Infectious waste shall not be disposed in a solid waste landfill unless the waste is processed and managed to meet the requirements of 310 CMR 19.061(6)(c)4.

3. Facilities other than landfills . Infectious waste (which has not been rendered non-infectious) shall not be accepted at a solid waste management facility unless that facility has received approval under 310 CMR 19.061 to manage infectious waste.

4. Infectious waste that has been rendered non-infectious in accordance with 105 CMR 480.000 and is packaged, labeled and otherwise managed in accordance with 105 CMR 480.000 is not subject to 310 CMR 19.061 and may be accepted at any solid waste facility.

(d) Requirements for Handling Sludges . In addition to the requirements at 310 CMR 19.061(6)(a), sludges shall be handled in accordance with the following:

1. General Requirements . Disposal of all types of sludges shall comply with the following requirements.

a. Sludges accepted at a solid waste facility shall not contain free draining liquids.

b. Sludges disposed at landfills shall contain a minimum of 20% solids.

c. Odor control methods, acceptable to the Department, shall be employed at all landfills accepting odor-producing sludges.

2. Requirements for Sewage Treatment and Water Treatment Sludges . In addition to the requirements set forth at 310 CMR 19.061(6)(d)1., sewage treatment and water treatment sludges shall comply with the following requirements.

a. Sewage treatment and water treatment sludges shall be incorporated into the active face of a landfill in a 3:1 mixture of solid waste to sludge or placed in a designated area and covered immediately.

b. Sewage treatment sludges may be accepted at a solid waste landfill only after land application and composting options have been investigated by the applicant or by the generator of such sludge and determined by the Department not to be feasible, provided that said investigation of options may be deferred for a reasonable time upon a determination by the Department that adverse impacts may occur as a result of delaying disposal of the sludge.

c. Sewage treatment sludges containing pathogens that have not been stabilized using methods approved by the Department shall not be disposed at an unlined landfill, unless specifically approved by the Department on a temporary basis.

3. Requirements for Industrial Wastewater Treatment Sludges . In addition to the requirements set forth at 310 CMR 19.061(6)(d)1., industrial wastewater treatment sludges shall comply with the following requirements.

The solid waste management facility operator shall provide data, descriptions and other information required at 310 CMR 19.061(4) to the Department for each separate source of industrial wastewater treatment sludge prior to acceptance at the landfill.

(7) Reclassification . The Department may reclassify a waste in accordance with 310 CMR 19.061(5) or place further conditions on an approval to manage a special waste in accordance with 310 CMR 19.061 should such action be deemed necessary. Any such reclassification or conditions shall be in writing.

8.0 Proposed Amendment of MassDEP Policy # COMM 97-001, "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills"

Note: This section contains the sections of Policy # COMM 97-001 that would be revised to include asbestos in soil. A complete version of this Policy is available at http://www.mass.gov/dep/cleanup/laws/finalpol.htm.

8.1 Terminology

This section contains definitions of the important terms and acronyms used in this Policy.

…

Debris Containing Asbestos Source Material means Debris, as defined at 310 CMR 40.0006, that includes any material that is less than 3 inches in diameter and contains 1 percent or more asbestos by area.

8.2 Contaminant Levels, and Approval Procedures for the Reuse and Disposal of Contaminated Soil at Massachusetts Landfills

4.1 Contaminant Levels for Reuse

Table 1

CONTAMINANT	Reuse Levels (mg/kg)[a]	
	Lined Landfills	Unlined Landfill
Total Arsenic	40	40
Total Cadmium	80	30
Total Chromium	1,000	1,000
Total Debris Containing Asbestos Source Material[g]	**1,000[h] 8,000[i]**	**1,000[h] 8,000[i]**
Total Lead	2,000	1,000
Total Mercury	10	10
Total Petroleum Hydrocarbons (TPH)	5,000	2,500
Total PCBs[b]	< 2	< 2
Total SVOCs[c]	100	100
Total VOCs[d]	10	4
Conductivity[e] (umhos/cm)	8,000 umhos/cm	4,000 umhos/cm
Listed or Characteristic Hazardous Waste (TCLP)[f]	NONE	NONE

TABLE 1 NOTES:

a **The reuse levels are expressed as total levels in mg/kg and apply to reuse of soil as daily cover, intermediate cover, and pre-capping contour material at lined landfills and unlined landfills as described in this Policy.**

b **Total concentrations of polychlorinated biphenyls EPA Method 8080.**

c **Total concentrations of compounds listed in EPA Method 8270.**

d **Total concentration of compounds listed in EPA Method 8260.**

e **For soil which may be expected to contain elevated NaCl.**

f **TCLP testing shall be performed for metals or organic compounds when the total concentrations in the soil are above the theoretical levels at which the TCLP criteria may be exceeded. For guidance parties shall consult United States Environmental Protection Agency, Memorandum #36, "Notes on RCRA Methods and QA Activities", pp. 19-21, Gail Hanson, January 12, 1993.**

g **Total Debris Containing Asbestos Source Material as measured using the MassDEP Sieve Method for Asbestos**

h **Concentration limit for reuse of soil contaminated with Debris Containing Asbestos Source Material as alternative daily or intermediate cover.**

i **Concentration limit for reuse of soil contaminated with Debris Containing Asbestos Source Material as pre-capping contour material (e.g., grading and shaping material).**

[Please note that the methods specified in footnotes d, e, and f indicate the universe of chemicals to be added up in calculating the total concentrations for these classes of contaminants. Section 5.0 of this Policy provides guidance for determining which specific chemicals must be considered chemicals of concern (e.g., contaminants) within the soil. This Policy does not specify the analytical test methods to be used to quantify the specific contaminants. Readers can consult 310 CMR 40.0017 Environmental Sample Collection and Analysis, 310 CMR 30.110 Criteria, Procedures for Determining Which Wastes are to be Regulated as Hazardous Waste or Non-Hazardous Waste and 310 CMR 30.151 Representative Sampling Methods for additional information which may be applicable to the selection of appropriate sampling and analytical methods.]

9.0 Draft Guidance: Best Management Practices for Bulk Loading of ACM Soil/Debris

*Note: in response to comments received on the 2004 proposal, this Guidance has been revised (see **bold** text below) to allow alternative container and truck liners that will prevent asbestos-contaminated soil from escaping during transport. Additionally, Some commenters indicated that the proposed requirement for conducting mechanical soil screening only in an enclosure under negative pressure was too onerous. Since the close of the public comment period, MassDEP has observed the operation of a mechanical device that screens large volumes of soil while wet (courtesy of the Massachusetts Department of Capital Asset Management, during a site preparation project at the Boston State Hospital site in Mattapan). While this equipment appears to be able to screen out large solid objects with less dust than would be generated by a dry screening operation, it also appeared to crush material that could contain asbestos, rendering it friable (if it was not friable to start with) and contaminating the resulting soil. Therefore, MassDEP continues to recommend that mechanical screening of soil containing asbestos only occur in an enclosure and under negative pressure. The Department will continue to monitor the development of new screening devices and may revisit this decision at a later time.*

1. Conduct perimeter air sampling on all four sides of the work area during all active handling operations (unless containment is used):
    a. Use phase contrast microscopy (PCM) to analyze a minimum of 8 air monitoring samples per 8-hour shift, and perform PCM analysis on-site to obtain real-time data (maintain data on-site). On 10% of samples, use transmission electron microscopy (TEM) to verify PCM results.
    b. Stop work and notify BWP if fiber levels exceed 0.01 fibers/cc.
    c. If containment is used for handling, collect and analyze clearance air monitoring samples prior to breaking down or moving containment.
    d. Employ a DOS certified Asbestos Project Monitor to perform air monitoring.

2. Loading Operations
    a. Keep ACM soils wet during excavation, handling and loading so that no dust is generated.
    b. If mechanical screening of ACM soil to remove debris will be performed, conduct screening in a negative-pressure contained work area using air cleaning.
    c. Clearly delineate (e.g., identify and mark) routes from loading area to equipment decontamination area to avoid contamination spread.
    d. Load soil from excavation directly into trucks or containers and avoid stockpiling of soil (i.e., to limit number of times soil is handled).
    e. Prevent visible emissions during all operations.
    f. To the extent feasible, use loading machinery that creates the least amount of soil disturbance (e.g., an excavator is preferable to a vacuum loader) and facilitates decontamination (e.g., tire vehicles are preferable to tracked vehicles).
    g. If a vacuum loader is used, the material outlet / loading operations must be conducted under negative-pressure containment.

3. Packaging
    a. Line each container or truck with a 6-millimeter thick polyethylene truck body liner. Polyethylene liners should be designed and sized for the container to be used and should be extended along the inside of the truck or container-bed gate to protect against contamination during loading and to facilitate decontamination. After loading, the liner should be sealed.
    b. Cover each truck with high-density tie-down tarps instead of pull-back covers.

c. For containers of asbestos containing waste, place labels noting "asbestos danger" and generator on top of sealed liner; place DOT asbestos placard (2212) on all four vertical sides of the container or vehicle being used.

4. Decontamination
   a. Use 3-stage personnel decontamination as appropriate.
   b. Establish an equipment decontamination area and ensure that the decontamination pad for equipment is constructed to withstand use weight of equipment, frequency of use, length of the job, etc. (e.g., multi-layer, with materials such as stone, EPDM-rubber roofing, hay bales, filters and pumps).
   c. Prior to disposal, collect and filter all water used in the decontamination process using a 5-micron filter and dispose of the filter as asbestos waste. Pre-filtration screening or pre-treatment should be implemented as needed to keep the 5-micron filter from clogging. Decontamination water that has been filtered with a 5-micron screen should be reused where possible. Disposal should be done in accordance with management plans for other wastewater generated by construction activities at the location.
   d. Clean the decontamination area as needed, at a minimum at the end of every shift.
   e. Waste resulting from the breakdown of personnel and equipment decontamination should be handled as asbestos containing waste material and should be packaged and disposed of accordingly.

5. Personal protective equipment
   a. Follow 453 CMR 6.00 Worker Protection Requirements and OHSA standards at 29 CFR Part 1926.1101.

6. Training/certifications
   a. Follow 453 CMR 6.00 Training and Certification Requirements